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DIAL DESIGN UPDATE MAY 1996

Montana Department of Environmental Quality and U.S Environmental Protection Agency

Montana Pole and Treating Plant Superfund Site Butte, Montana

INTRODUCTION

This fact sheet describes recent design activities and upcoming cleanup activities at the Montana Pole and Treating Plant Superfund site. In March 1996, the remedial design for site cleanup was completed, and by June, construction of the first phase of the cleanup will begin. This work will address both soil and groundwater contamination; it includes excavation and biological treatment of contaminated soil and modification of the present groundwater treatment facility to enhance in-place biological treatment of groundwater. Under the current schedule, modifications of the groundwater system and excavation of soil will be completed by November 1996, and full-scale treatment of soil will begin in Spring 1997.

SITE BACKGROUND

The site is located on the western edge of Butte, Montana, in Silver Bow County. Montana Pole operated as a wood treating facility from 1946 to 1984, when the facility closed. During this period, a mixture of pentachlorophenol (PCP) in petroleum oil (similar to diesel) was the primary treating fluid used to preserve poles, posts and bridge timbers in pressure and butt treating processes. In 1987, the site was placed on the National Priorities List, a list of the nation's priority Superfund cleanup sites eligible for federal cleanup funds.

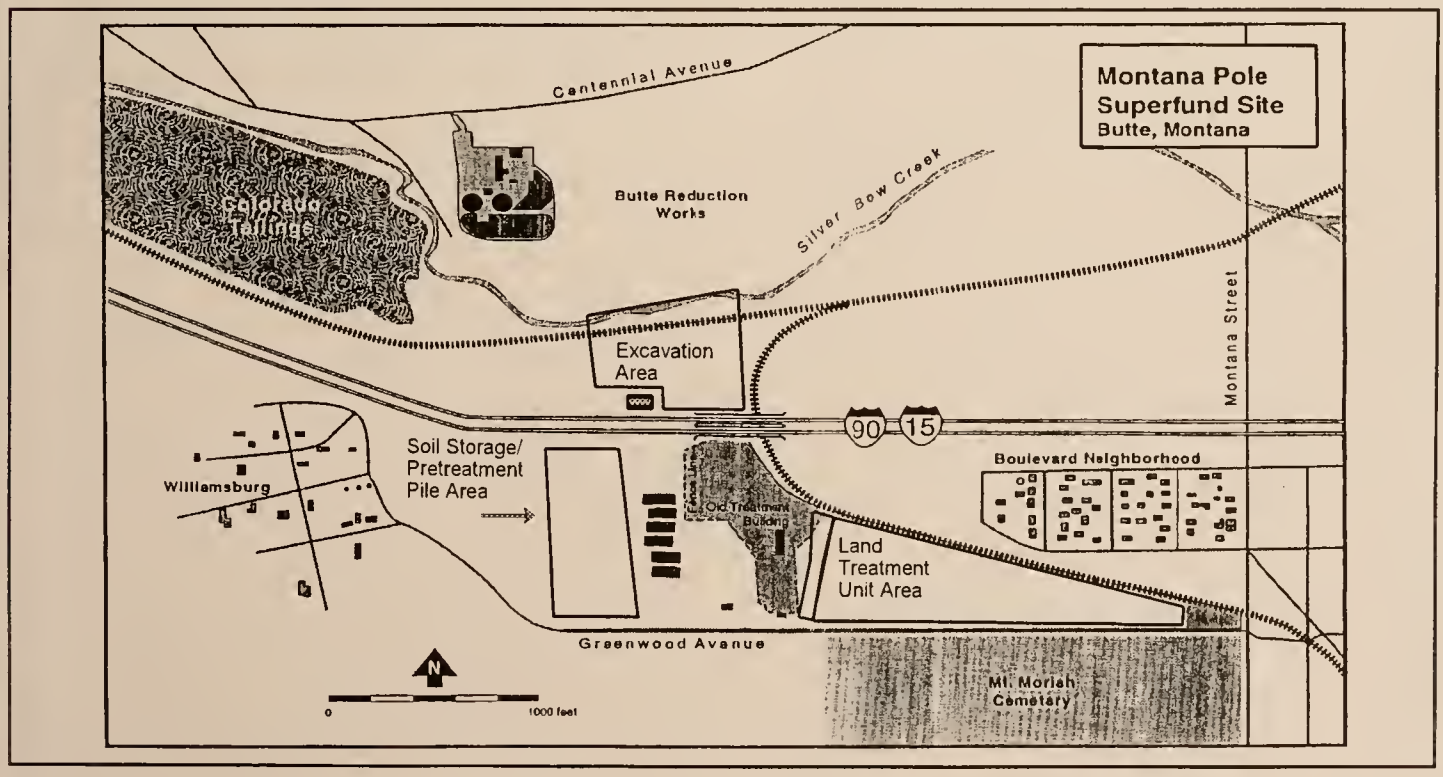
Results of Superfund investigations show that on-site soil and groundwater below and near the site are contaminated with wood treating chemicals. The State of Montana Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) selected a final remedy for the site in 1993. The Record of Decision (ROD) was signed in September 1993 and set forth the selected cleanup remedy for the site, including:

- Excavation of accessible contaminated soil and biological treatment to risk-based cleanup levels;
- Replacement and revegetation of soil after treatment;
- Water flushing beneath the interstate highway crossing the site to remove treating oil present at the groundwater surface;
- Pumping and treating site groundwater to prevent off-site

PUBLIC MEETING

An informational meeting will be held in Butte at **7:00 p.m. on Wednesday, May 22, 1996, at the Boulevard Fire Hall**, corner of Franklin and LaSalle Streets. Staff from the Montana Department of Environmental Quality will discuss the cleanup design for the site and the planned construction activities slated for this year. Please attend if you're interested in what will be happening at the site this summer.

Figure 1 Montana Pole Site



migration of contaminated groundwater;

- In-place biological treatment of contaminated groundwater and soil to address residual contamination not removed through excavation or water flushing;
- Off-site incineration of oily wastes and sludges presently stored on site or recovered during cleanup activities;
- Decontamination and off-site disposal of equipment and debris; and
- Sampling of site groundwater, surface water and soil to monitor movement and concentrations of contaminants and to test the effectiveness of the cleanup.

REMEDIAL DESIGN COMPLETED

Over the past year and a half, the agencies and DEQ's design contractor, Camp, Dresser and McKee, Inc. (CDM) have been designing the site cleanup specified by the ROD. This design was completed in March. The cleanup, which could take up to ten years to address contaminated soil and up to thirty years to address contaminated groundwater, will be conducted in phases. Phase 1 will be constructed this summer and fall and includes excavation of a substantial portion of the contaminated site soil, placement of this soil in on-site treatment facilities, modification of the existing groundwater treatment system and other activities to address site debris and wastes. Future phases of work will occur after completion of Phase 1.

Work is being conducted under the direction of DEQ, the lead agency at the site, with assistance from EPA. Funding for the cleanup will be provided by potentially responsible parties through an agreement with the agencies. The prime contractor hired by DEQ to implement Phase I construction is ASRC Contracting Company, Inc. (ACCI). ACCI is a subsidiary of the Arctic Slope Regional Corporation, a company formed and owned by the Inupiat Eskimos of Alaska. DEQ's design engineer, CDM, will assist DEQ with oversight of ACCI's work.

CONTAMINATED SOIL TO BE TREATED

The main chemical of concern in on-site soil is pentachlorophenol (PCP), a wood treating chemical used at the site.

Contaminated soil containing PCP at levels above 34 parts per million will be excavated and treated biologically in a ten-acre Land Treatment Unit (LTU) and in Soil Staging/Pretreatment Piles (SSPs). During excavation, wood treating fluid found on the groundwater surface will be recovered. Soil left in place at the excavated areas will be sampled to verify that any remaining contamination is below levels of concern. In addition, soil stained with oily wood treating fluid will be excavated and biologically treated.

Figure 1 shows the area on site where soil will be excavated and removed. Soil will be excavated in the area north of Interstate 15/90. It is currently estimated that about 50,000 cubic yards of contaminated soil will be excavated and biologically treated in the LTU and SSPs during Phase 1. In addition, 10,000 cubic yards of soil stored in on-site buildings will be placed in the SSPs. The exact amount of soil undergoing biological treatment will be based upon the results of sampling to be conducted during excavation.

GROUNDWATER TREATMENT SYSTEM MODIFICATIONS

The on-site groundwater treatment system, built by EPA in 1992, will be modified during Phase I remedial action. After contaminated soil is excavated in the area between I-15/90 and Silver Bow Creek (SBC), two groundwater interception trenches will be constructed to extract contaminated groundwater. These trenches will replace extraction wells currently being used. Contaminated groundwater pumped from the trenches will be treated in the water treatment plant. Two methods for water treatment will be provided. Some of the extracted, contaminated groundwater will flow though the current system of carbon filters, where organic contaminants are removed, and then discharged to SBC after meeting cleanup levels. Some water will have oxygen and nutrients added and then be reinfiltrated back into the excavated area to stimulate biological degradation. The facility will have the capability of treating 150 gallons per minute through the carbon system and up to 400 gallons per minute through the in-place biological system.

SHORT-TERM IMPACTS DURING CONSTRUCTION AND OPERATION

No significant impacts are foreseen, although steps have been taken to minimize any potential impacts to the local neighborhood and Butte community during construction and operation of the remedy. Planned protective measures include the following:

1. Access to the excavated areas, treatment unit and other site areas will be strictly limited. Security fencing will be placed around the entire site.

2. Health and safety procedures will be followed at all times during soil excavation, transportation, and treatment to protect on-site workers and nearby residents.

3. Dust control measures, such as water application, will be used to help minimize dust during soil excavation, soil transport, and treatment unit construction.

4. DEQ will monitor air quality during construction activities to ensure that no unacceptable levels of contaminants migrate off-site.

5. Equipment decontamination procedures will be used before transporting tailings or uncontaminated debris on public roads, in order to ensure that contaminants are not accidentally released from the site.

6. Groundwater monitoring will be conducted to confirm that no releases of leachate are occurring from the land treatment unit.

7. Noise from construction equipment is not expected to be a problem. However, noise levels will be continually assessed during construction activities.

8. Spill notification listings and emergency contingency plans that meet all applicable local, state and federal requirements will be in place to ensure prompt response, in the event of an accident.

THE BIOLOGICAL TREATMENT PROCESS

Biological treatment will be used to clean contaminated soil and groundwater at the site. During biological treatment, microbes (bacteria) that occur naturally in the soil and groundwater are used to break down contaminants into less harmful chemicals. The microbes feed on hydrocarbons including PCP. Complex pollutants, such as PCP, are digested and broken down into energy sources that the microbes need to live on and to reproduce. Oxygen, nutrients and moisture are periodically added to contaminated soil (oxygen and nutrients are added to groundwater) to stimulate the growth of microbes, thereby increasing the biological processes and the rate of contaminant breakdown.

DESIGN OF THE LAND TREATMENT UNIT

A land treatment unit will be used to biologically treat contaminated soil. This type of unit can treat a large quantity of soil in a relatively small area. Cleanup levels can be reached and the soil can be re-used without further treatment. This treatment approach has already been successfully used at other former wood treating sites in western Montana to clean up contamination similar to that found at the Montana Pole site.

The land treatment unit will occupy approximately 10 acres on site in an area east of the former plant process area (see Figure 1). The land treatment unit will operate only during the spring, summer and fall months, when conditions are best for proper biological treatment of contaminated soil. It is anticipated that the treatment process will take one to two years to clean each of two layers. Four to five years of biological treatment may be needed to reduce chemicals of concern in all soil excavated during Phase 1 to acceptable levels.

Monitoring wells will be used to monitor groundwater quality and conditions before, during, and after operation of the land treatment unit. Groundwater monitoring will make certain that potential releases from the land treatment unit have not occurred. Additional details about the design of the land treatment unit can be found in design documents which are available for public review at the DEQ Superfund office in Helena and at the Montana Tech Library in Butte.

UPCOMING CONSTRUCTION ACTIVITIES

Many construction activities will be taking place this summer and fall. Work to prepare for the construction of the LTU and SSPs will begin by June. As areas are constructed to accept contaminated soil, soil excavation between Interstate 15/90 and Silver Bow Creek will begin. Soil excavation and placement of the soil in the LTU and SSPs will continue through the fall of this year.

Trucks transporting contaminated soil and debris will not travel on public roads. Tailings and site debris free of PCP contamination will be transported to the Butte mine-waste repository and the old Butte landfill, respectively. Trucks will be lined for leakage control when necessary, and will be cleaned off before traveling on public roads. All transportation and safety requirements will be followed during off-site travel.

Plans will also be in place to safeguard workers and the public from accidents and exposures to site contamination during construction and excavation work. Health and safety officials will be on-site to ensure that all safety regulations established in the plans are followed. Other protective measures to be taken are summarized in the sidebar on page 2.

BIOLOGICAL TREATMENT IN THE LAND TREATMENT UNIT

1. An estimated 32,000 cubic yards of contaminated soil will be placed in two, one-foot layers in the land treatment unit. Treatment in year 1 (1997) will occur in the top layer only.

2. Water from an adjacent retention pond and nutrients will be mixed together and sprayed on the soil surface. This will stimulate the growth of naturally occurring microbes in the top layer that will break down the contaminants.

3. The top layer of soil will be tilled to aerate it. The increased oxygen in the soil will promote the growth of oxygen-dependent microbes necessary for biological treatment.

4. The treatment unit will be lined with an impermeable synthetic liner. Leachate (waste liquid containing contaminants that seep through the soil layers in the unit) will be collected in perforated drainage pipes at the base of the unit and conveyed to a central sump.

5. Sump water will be returned to the lined retention pond for storage and re-use as irrigation water during further treatment. A berm will be built around the land treatment unit and the water retention pond to prevent storm water from draining into, and flowing off of, the site.

6. After about a year of treatment, treated soil in the top layer will be removed and used on-site for fill. A second round of treatment will then occur.

Schedule of Activities

Completion of Remedial Design	March 1996
DEQ Award of Phase 1 Construction Contract	May 1996
Remedial Design/Remedial Action Public Meeting	May 22, 1996
Completion of Phase 1 Excavation Activities	November 1996
Begin Soil Treatment Operations	May 1997

MAILING LIST

DEQ is updating the Montana Pole site mailing list. If you would like to be added to this list (or taken off of the list), please call toll free 1-800-246-8198.

FOR MORE INFORMATION

For more information about the Montana Pole site or the Superfund process, please write or call:

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Superfund Program
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2209 Phoenix Avenue
Helena, Montana 59620-0901
(406) 444-1420 or toll-free in Montana 1-800-246-8198

Jim Harris
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301 South Park, Drawer 10096
Helena, Montana 59626
(406) 441-1150

INFORMATION REPOSITORIES

Information repositories contain documents relating to the investigation and cleanup of Superfund sites. Anyone interested in the Montana Pole Superfund site is encouraged to read the documents available in the information repositories. Please call the information repositories for hours of operation.

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2209 Phoenix Avenue
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